

WHAT IS CLAIMED IS:

1                   1.       A storage system group comprising:  
2                   a first storage system connected to a host device for sending data to and  
3 receiving data from said host device; and  
4                   a second storage system connected to said first storage system for receiving  
5 data from said first storage system,  
6                   wherein said first storage system comprises:  
7                   a first storage area for writing data sent from said host device; and  
8                   a second storage area for writing the data written in said first storage  
9 area and update information relating to said data;  
10                  said second storage system comprises a third storage area for storing  
11 the data read from said second storage area and update information relating to said data; and  
12                  the data and update information stored in said third storage area are  
13 read from said first storage system at prescribed time intervals.

1                   2.       The storage system group according to claim 1, wherein said second  
2 storage system conducts the control so as to determine said prescribed time intervals  
3 according to a number of data read from said second storage area.

1                   3.       The storage system group according to claim 1, wherein said second  
2 storage system conducts the control so as to determine said prescribed time intervals  
3 according to a traffic of data sent and received between said first storage system and said  
4 second storage system.

1                   4.       The storage system group according to claim 1, wherein said second  
2 storage system conducts the control so as to determine said prescribed time intervals  
3 according to a storage capacity held by said third storage area.

1                   5.       The storage system group according to claim 1, wherein said second  
2 storage system conducts the control so as to determine said prescribed time intervals  
3 according to a processing load of said second storage system itself.

1                   6.       The storage system group according to claim 1, wherein said second  
2 storage system reads from said first storage system the information relating to the storage

3 capacity held by said second storage area in said first storage system and conducts the control  
4 so as to determine said prescribed time intervals according to said information thus read.

1 7. The storage system group according to claim 1, wherein the update  
2 information to be written into said second storage area relates to the update sequence of the  
3 data that is to be written into said first storage area.

1 8. The storage system group according to claim 7,  
2 wherein said first storage system possesses management information relating  
3 to said second storage area; and  
4 said second storage system reads from said first storage system the  
5 management information relating to said second storage area which is possessed by said first  
6 storage system and conducts the control so as to determine said prescribed time intervals  
7 according to said management information thus read.

1 9. The storage system group according to claim 1,  
2 wherein a plurality of said first storage areas are present; and  
3 the information that will be written in said second storage area is created by  
4 taking as the object the data that will be written in said plurality of first storage areas.

1 10. The storage system group according to claim 9, wherein the update  
2 information to be written in said second storage area relates to the update sequence of the  
3 data that is to be written in said plurality of first storage areas.

1 11. The storage system group according to claim 9,  
2 wherein said first storage system allocates said second storage area as a store  
3 area for the update information of the data that is to be written in said plurality of first storage  
4 areas and possesses the management information relating to said second storage area; and  
5 said second storage system reads from said first storage system the  
6 management information relating to said second storage area possessed by said first storage  
7 system and  
8 conducts the control so as to determine said prescribed time intervals  
9 according to said management information thus read.

1 12. The storage system group according to claim 1,

2                wherein said second storage system transmits a command requiring the  
3 forwarding of the data stored in said second storage area and the update information relating  
4 to said data to said first storage system at said prescribed time intervals; and  
5                said first storage system transmits the data stored in said second storage area  
6 and the update information relating to said data to said second storage system in response to  
7 said command.

1                13.     The storage system group according to claim 1, wherein said second  
2 storage system has a fourth storage area corresponding to said first storage area in said first  
3 storage system and stores data in said fourth storage area based on the update information and  
4 data stored in said third storage area.

1                14.     The storage system group according to claim 13, wherein said second  
2 storage system controls the timing of the process for storing data in said fourth storage area  
3 according to a processing load of said second storage system itself.

1                15.     The storage system group according to claim 1,  
2                wherein said first storage system comprises a host adapter for sending data to  
3 and receiving data from the host device, a cache for retaining the data received by said host  
4 adapter, a disk adapter for transferring the data stored in said cache, and a plurality of disk  
5 drives for storing the data according to said disk adapter control; and  
6                said first storage area and said second storage area are allocated from a storage  
7 area in said plurality of disk drives.

1                16.     The storage system group according to claim 1;  
2                wherein said second storage system comprises a host adapter for sending data  
3 to and receiving data from the host device, a cache for retaining the data received by said host  
4 adapter, a disk adapter for transferring the data stored in said cache, and a plurality of disk  
5 drives for storing the data according to said disk adapter control; and  
6                said third storage area is allocated from a storage area in said plurality of disk  
7 drives.

1                17.     A storage system group comprising:  
2                a first storage system connected to a host device for sending data to and  
3 receiving data from said host device;

4 a second storage system connected to said first storage system for receiving  
5 data from said first storage system; and  
6 a third storage system connected to said second storage system for receiving  
7 data from said second storage system;  
8 wherein said first storage system comprises a first storage area for writing data  
9 sent from said host device;  
10 said second storage system comprises a second storage area for writing the  
11 data written in said first storage area in said first storage system and update information  
12 relating to said data;  
13 said third storage system comprises a third storage area for storing the data  
14 read from said second storage area in said second storage system and update information  
15 relating to said data; and  
16 the data and update information to be stored in said third storage area are read  
17 from said second storage system at a prescribed time intervals.

1 18. The storage system group according to claim 17,  
2 wherein said third storage system conducts the control so as to determine said  
3 prescribed time intervals according to a number of data read from said second storage area.

1 19. The storage system group according to claim 17, wherein said third  
2 storage system conducts the control so as to determine said prescribed time intervals  
3 according to a traffic of data exchanged between said second storage system and said third  
4 storage system.

1 20. The storage system group according to claim 17, wherein said third  
2 storage system conducts the control so as to determine said prescribed time intervals  
3 according to a storage capacity held by said third storage area.

1 21. The storage system group according to claim 17, wherein said third  
2 storage system conducts the control so as to determine said prescribed time intervals  
3 according to a processing load of said third storage system itself.

1 22. The storage system group according to claim 17, wherein said third  
2 storage system reads from said second storage system the information relating to the storage  
3 capacity held by said second storage area in said second storage system and conducts the

4 control so as to determine said prescribed time intervals according to said information thus  
5 read.

1 23. The storage system group according to claim 17, wherein the update  
2 information to be written into said second storage area relates to the update sequence of the  
3 data that is to be written into said second storage area.

1 24. The storage system group according to claim 23,  
2 wherein said second storage system possesses management information  
3 relating to said second storage area; and  
4 said third storage system reads from said second storage system management  
5 information relating to said second storage area which is possessed by said second storage  
6 system and conducts the control so as to determine said prescribed time intervals according to  
7 said management information thus read.

1 25. The storage system group according to claim 17,  
2 wherein said third storage system transmits a command requiring the  
3 forwarding of the data stored in said second storage area and update information relating to  
4 said data to said second storage system at said prescribed time intervals; and  
5 said second storage system transmits the data stored in said second storage  
6 area and the update information relating to said data to said third storage system in response  
7 to said command.

1 26. The storage system group according to claim 17, wherein said third  
2 storage system has a fourth storage area corresponding to said first storage area in said first  
3 storage system and stores data in said fourth storage area based on the data and update  
4 information stored in said third storage area.

1 27. The storage system group according to claim 26, wherein said third  
2 storage system controls the timing of the process for storing data in said fourth storage area  
3 according to a processing load of said third storage system itself.

1 28. The storage system group according to claim 17, wherein when said  
2 first storage system has written data sent from said host device to said first storage area, the  
3 first storage system transmits the data written in said first storage area to said second storage  
4 system; and

5                               said second storage system writes the data written in said first  
6 storage area of said first storage system and update information relating to said data into said  
7 second storage area.

1                   29.     A storage system group comprising:  
2                   a first storage system connected to a host device for sending data to and  
3 receiving data from said host device;  
4                   a second storage system connected to said first storage system for receiving  
5 data from said first storage system; and  
6                   a third storage system connected to said second storage system for receiving  
7 data from said second storage system;  
8                   wherein said first storage system comprises a first storage area for writing data  
9 sent from said host device;

10                   said second storage system comprises a second storage area for writing data  
11 sent from said first storage system and a third storage area for writing the data written into  
12 said second storage area and update information relating to said data;

13                   said third storage system comprises a fourth storage area for storing data read  
14 from said third storage area in said second storage system and update information relating to  
15 said data; and

16                   the data and update information to be stored in said fourth storage area are  
17 read from said third storage system at the prescribed time intervals.

1                   30.     The storage system group according to claim 29, wherein said third  
2 storage system conducts the control so as to determine said prescribed time intervals  
3 according to a number of data read from said third storage area.

1                   31.     The storage system group according to claim 29, wherein said third  
2 storage system conducts the control so as to determine said prescribed time intervals  
3 according to a traffic of data exchanged between said second storage system and said third  
4 storage system.

1                   32.     The storage system group according to claim 29, wherein said third  
2 storage system conducts the control so as to determine said prescribed time intervals  
3 according to a storage capacity held by said fourth storage area.

1                   33.     The storage system group according to claim 29, wherein said third  
2 storage system conducts the control so as to determine said prescribed time intervals  
3 according to a processing load of said third storage system itself.

1                   34.     The storage system group according to claim 29, wherein said third  
2 storage system reads from said second storage system information relating to the storage  
3 capacity held by said third storage area in said second storage system and conducts the  
4 control so as to determine said prescribed time intervals according to said information thus  
5 read.

1                   35.     The storage system group according to claim 29, wherein the update  
2 information to be written into said third storage area relates to the update sequence of the data  
3 to be written into said second storage area.

1                   36.     The storage system group according to claim 35,  
2 wherein said second storage system possesses management information  
3 relating to said third storage area; and  
4 said third storage system reads from said second storage system the  
5 management information relating to said third storage area which is possessed by said second  
6 storage system and conducts the control so as to determine said prescribed time intervals  
7 according to said management information thus read.

1                   37.     The storage system group according to claim 29,  
2 wherein said third storage system transmits a command requiring the  
3 forwarding of data stored in said second storage area and the update information relating to  
4 said data to said second storage system at said prescribed time intervals; and  
5 said second storage system transmits the data stored in said third storage area  
6 and update information relating to said data to said third storage system in response to said  
7 command.

1                   38.     The storage system group according to claim 29, wherein said third  
2 storage system has a fifth storage area corresponding to said second storage area in said  
3 second storage system and stores data in said fifth storage area based on the data and update  
4 information stored in said fourth storage area.

1                    39.     The storage system group according to claim 38, wherein said third  
2     storage system controls the timing of the process for storing data in said fifth storage area  
3     according to a processing load of said third storage system itself.